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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,583	01/23/2006	Henk van de Weg	A0004/US	2674

30522 7590 12/28/2006  
KRATON POLYMERS U.S. LLC  
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HOUSTON, TX 77082

EXAMINER
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RABAGO, ROBERTO

ART UNIT	PAPER NUMBER
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1713

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/28/2006	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/565,583

Applicant(s)

WEG ET AL.

Examiner

Roberto Rábago

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 11-32 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 1/23/06; 5/9/06
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 11-16 and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winkler (US 3,700,748).

The reference discloses hydrogenation of conjugated diene/vinyl arene block copolymers wherein substantially all of the pendant vinyl groups are hydrogenated, but less than 50% of the 1,4-unsaturations are hydrogenated; the 1,2-structures comprise 8-80%, and the process includes an iron catalyst (col. 2, lines 28-42; col. 5, lines 10-16; claims 1-8). Example 1 describes an embodiment of the process, but has not included an iron-containing catalyst and has not reported the resultant percentage of 1,4-content. However, one of ordinary skill in the art would be motivated to obtain the claimed process for the following reasons. The reference clearly and repeatedly states that hydrogenation of the 1,4-groups is less than 50% while the hydrogenation of 1,2-groups is substantially complete, and therefore for at least the range of block copolymer having about 60%-65% vinyl content prior to hydrogenation, the expected result would be a hydrogenated polymer with vinyl content of less than 5% and 1,4-content of at least

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30% as required in the claims. Furthermore, selection of Fe catalyst would be obvious because it is recommended among only three metals. Regarding the presence of lithium alkoxide, the example described in the reference has not reported including any components which would result in lithium alkoxide, and therefore the use of analogous methods using an Fe catalyst would not be expected to contain the prohibited levels of lithium alkoxides.

Applicants' discussion of this reference in the specification is noted; however, applicants' comparative examples have not accurately reproduced the example of the reference, and therefore the reason for applicants' failure to obtain the predicted product cannot be determined. If applicants are attempting to challenge the accuracy of the methods and results described in the reference (and perhaps the enablement of the patented claims), the showing must be of sufficient character and weight that the ordinary skilled worker would necessarily conclude that the hydrogenation product stated the reference is not possible to obtain from the recommended procedures. Applicants' comparative examples do not constitute such a showing.

3. Claims 17-22 and 27-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winkler (US 3,700,748) in view of Willis et al. (US 4,396,761).

The parent claims are discussed with respect to Winkler above. Winkler is primarily concerned with the hydrogenation process, and does not discuss methods of polymer processing workup, such as catalyst removal steps. However, removal of transition metal catalyst removal is commonly done to improve the properties of the

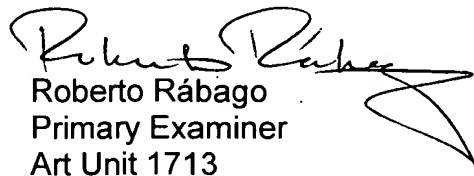
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hydrogenated polymer. Therefore, one of ordinary skill in the art would be motivated to use conventional methods which have been successfully used for this purpose, such as the method disclosed in Willis, which describes a method for removing hydrogenation residues by treatment with an alpha hydroxyl sulfonic acid (see abstract, col. 2, lines 5-28).

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberto Rábago whose telephone number is (571) 272-1109. The examiner can normally be reached on Monday - Friday from 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Roberto Rábago  
Primary Examiner  
Art Unit 1713

RR  
December 22, 2006